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L4: Entry 6 of 13   File: USPT   Jan 25, 2000

DOCUMENT-IDENTIFIER: US 6018317 A
TITLE: Cochannel signal processing system

Detailed Description Text (254):
9. Beamforming: It is important to note that beamforming for P sources requires a matrix multiplication of two matrices: the V matrix that is P by P, and the reduced dimensional observation matrix y(t), which is P by N, where N is the number of snapshots. Usually N is larger than P and this matrix multiplication may take a long time because of its size. Therefore, it may be appropriate to do final beamforming in another processor since it does not introduce any feedback. Final beamforming is accomplished as:

Detailed Description Text (352):
Code division multiplexing/multiple access (CDM/CDMA)

Detailed Description Text (359):
SHMA prevents cochannel interference by prohibiting intracell frequency reuse and allowing only intercell frequency reuse. The remaining four channel access schemes TDMA, CDMA, FHMA, and ADMA overcome this restriction and enable frequency reuse among users within a cell-intracell frequency reuse.

Detailed Description Text (361):
CDMA is a form of direct sequence spread spectrum in which the various users encode their transmissions with orthogonal or nearly orthogonal spreading sequences. All transmitting users use the same frequency. In order to receive a particular signal, a receiver must despread the signal using the same sequence that was used to spread it at the transmitter. Because of the orthogonality property, the cross-correlation between any two spreading codes is near zero. For this reason, the user signals after reception and despreading are free of cochannel interference. CDMA is the basis of the IS-95 communication standard.

Detailed Description Text (362):
FHMA is used to apply frequency hop spread spectrum technology to communication networks. A set of frequency hopping (FH) radios operate in the same band on the same hop frequencies and transmit to a central receiving facility or base station without mutual interference provided the radios use non-interfering hop sequences. Unlike CDMA, the required sequence property is not orthogonality or low cross-correlation, but rather a mathematical relative of the Latin Square. FHMA can be thought of as a dynamic form of FDMA in which the frequency assignments change regularly.

Detailed Description Text (533):
which results in the modified observation model ##EQU35## in which the vector v.sub.k is the kth column of V. Since V is a unitary matrix, we have the following relationship between the modified steering vectors (b.sub.k s): ##EQU36##

Detailed Description Text (751):
9. Beamforming: It is important to note that beamforming for P sources requires a matrix multiplication of two matrices: the V matrix that is P by P, and the reduced dimensional observation matrix y(t), which is P by N, where N is the number of

h   e b   b g ee e f   e   b   b c e

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